IGS Real-time Resources Supporting Multi-GNSS Experiment

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The International GNSS Service (IGS) recently started with a real-time service disseminating orbit and clock corrections over the Internet. It is mainly based on observations collected from the IGS real-time tracking network processed by a number for Analysis Centers. To support the IGS Multi-GNSS Experiment (M-GEX), a growing number of involved stations also observe Galileo, QZSS and BeiDou in addition to GPS and GLONASS. The intention is to enable and further develop the real-time estimation of satellite orbits and clocks from all systems as well as using all of them in applications like real-time Precise Point Positioning (PPP).

Recently a new RTCM-3 standard has been recommended to transport streams carrying observations from (modernized) GPS, GLONASS and Galileo satellites. A stream format supporting QZSS and BeiDou has been drafted. A new RINEX-3 standard is under development which allows archiving all observation types from all the new systems for post processing purposes.

This presentation focuses on IGS resources for real-time conversion of observations in proprietary raw formats to the new open RTCM-3 stream and RINEX-3 file standards. So-called High Precision Multiple Signal Message (HP MSM) streams are produced and disseminated via Ntrip broadcaster under the umbrella of IGS. A high-rate RINEX-3 archive saves 1 Hz observation files as converted from MSM streams. RINEX-3 file editing, concatenation and quality check is enabled with the BKG Ntrip Client (BNC) software developed under GNU GPL supporting GPS, GLONASS, Galileo, BeiDou, QZSS and SBAS.